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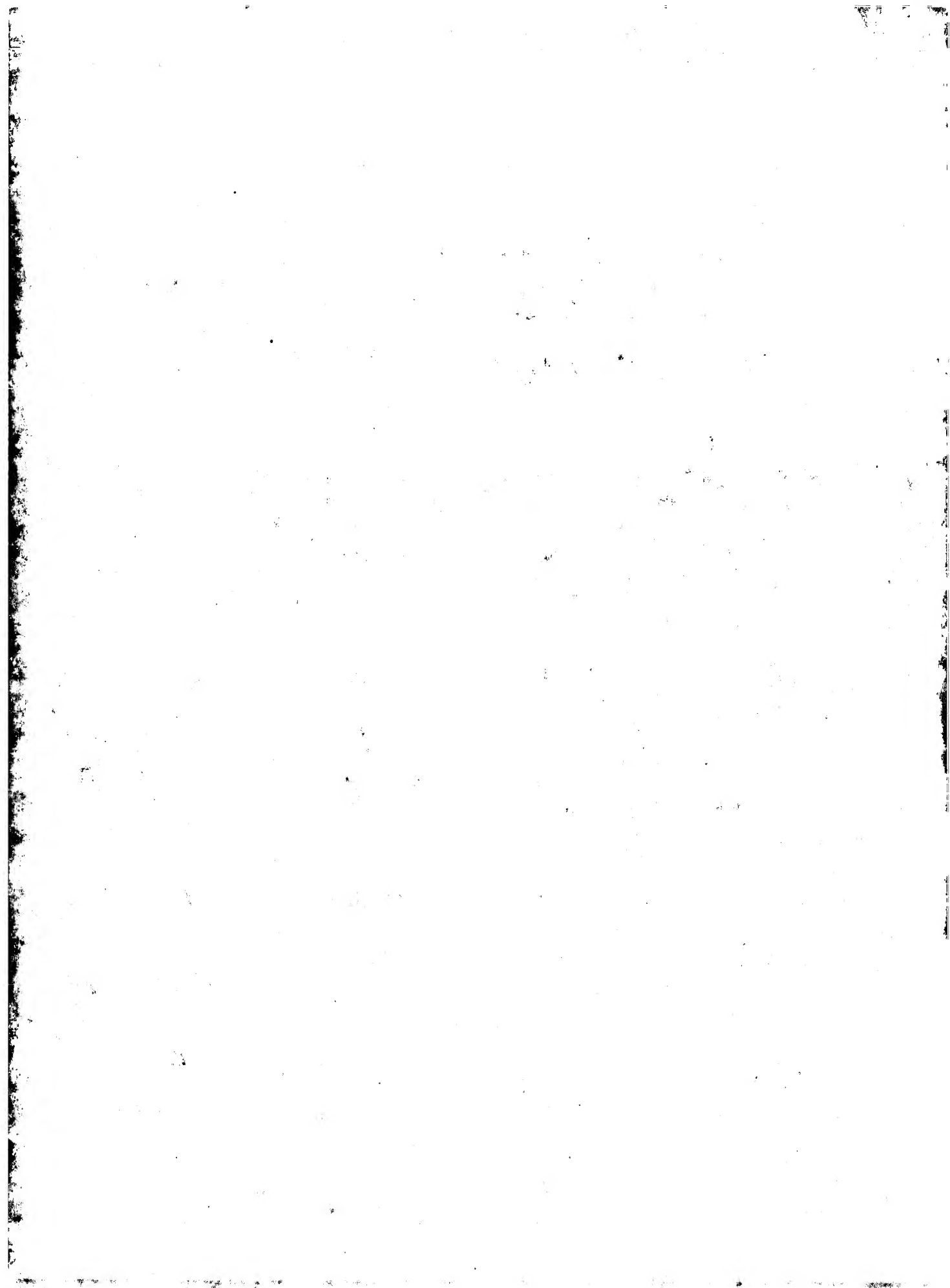
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(11) Publication number:

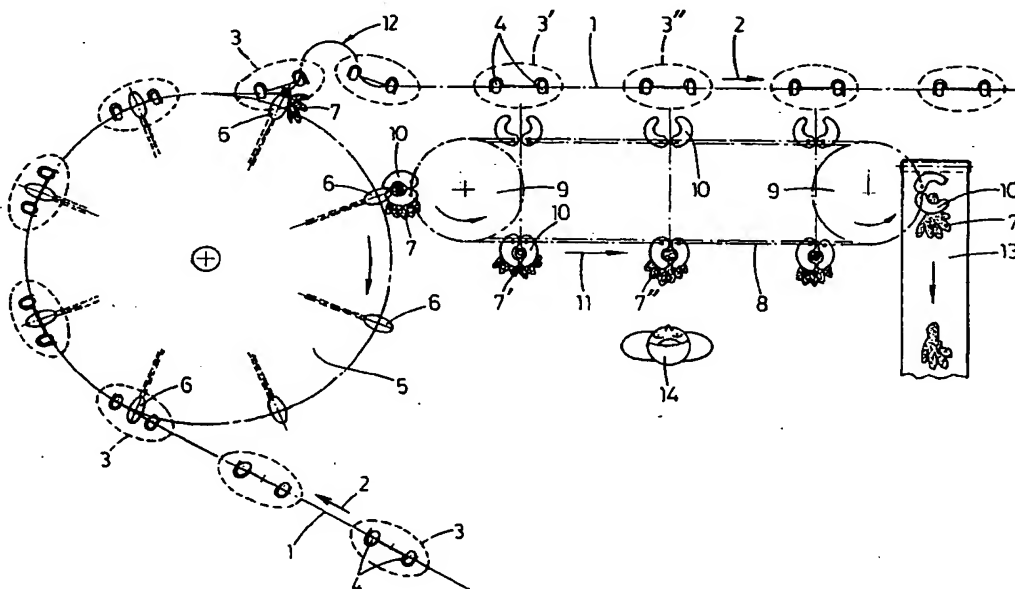
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EUROPEAN PATENT APPLICATION(21) Application number: **92202285.0**(51) Int. Cl.⁵: **A22C 21/06**(22) Date of filing: **24.07.92**(30) Priority: **03.09.91 NL 9101484**(43) Date of publication of application:
10.03.93 Bulletin 93/10(84) Designated Contracting States:
**AT BE CH DE DK ES FR GB GR IT LI LU MC
NL PT SE**(71) Applicant: **MACHINEFABRIEK MEYN B.V.**
Noordeinde 68
NL-1511 AE Oostzaan(NL)(72) Inventor: **Meyn, Cornelis**
c/o Noordeinde 68
NL-1511 AE Oostzaan(NL)(74) Representative: **Voncken, Bartholomeus Maria**
Christiaan et al
Octroolbureau Los en Stigter B.V. P.O. Box
20052
NL-1000 HB Amsterdam (NL)(54) **Method and apparatus for processing poultry.**

(57) In accordance with the invention a method is provided in which entrails (7), which have been removed from the abdominal cavity of birds (3), in a from the poultry separated manner are moved synchronously with the birds for a veterinary inspection. The apparatus according to the invention comprises a conveyor (8) for in a from the poultry separated

manner and along part of its track conveying the entrails synchronously with the poultry. An embodiment of such a conveyor comprises an endless conveyor, such as a chain conveyor, comprising a number of transportation means (10) for receiving the respective entrails packages.



The invention relates to a method for processing poultry which with its legs is suspended from a suspension conveyor, wherein the entrails are removed from the abdominal cavity of the poultry.

In a known method of this type the entrails, which are still connected with the bird after being removed from the abdominal cavity of the poultry, are suspended over the back of the poultry. A veterinary inspector may now inspect the entrails and decide whether or not the poultry is fit for consumption. The determination of irregularities in an entrails package leads to rejection of the respective bird and removing it from the suspension conveyor.

A disadvantage of this known method is that there is a risk that the entrails, especially excrements leaving the intestines, contaminate the outside of the respective bird, which is undesirable.

It is an object of the invention to provide a method of the type referred to above in which this disadvantage is eliminated in a simple, but nevertheless effective way.

Thus the method according to the invention is characterized in that the entrails in a from the poultry separated manner are moved synchronously therewith over some distance.

Because the entrails are separated from the poultry and at most are connected therewith through a layer of fat no contact occurs between these entrails, after being removed from the abdominal cavity of the poultry, and the outside of the poultry. Thus the risk of a possible contamination is highly reduced. For enabling a reliable inspection of the poultry starting from the quality of the entrails, in accordance with the method according to the invention care has been taken, that the entrails are moved synchronously with the poultry over some distance. Preferably the entrails are entirely loosened from the poultry. Now no connection whatsoever occurs anymore between the entrails and the poultry, such that the risk of contamination has entirely vanished. Resulting from the synchronous movement a veterinary inspector judging the quality of the entrails can determine unambiguously which bird belongs to which entrails.

The invention further relates to an apparatus for carrying out the method according to the invention, comprising means for removing the entrails from the abdominal cavity of the poultry. Such means for removing the entrails from the abdominal cavity of the poultry are known per se and do not need any further elucidation.

The apparatus according to the invention is characterized by a conveyor for conveying the entrails synchronously with the poultry along part of its track. In this respect the entrails may or may not be still connected to the poultry through a layer of fat or alike.

Preferably the said part of the conveyor for the entrails follows a track positioned aside the poultry. Like this the distance between the poultry and the entrails is minimal, such that the risk is minimal that an entrails package is allotted to a wrong bird, when the entrails are entirely loosened from the poultry.

Further, according to a handy embodiment of the apparatus according to the invention, it is preferred that the conveyor comprises an endless conveyor, such as a chain conveyor, following an elongated substantially horizontal track, said conveyor carrying a number of transportation means for receiving the respective entrails packages. Such an embodiment offers a constructively simple embodiment, however an extremely effective operation.

Further it is advantageous, if the direction of progression of the conveyor is such that the transportation means move synchronously with the poultry at the conveyor part distanced most from the poultry. From the viewpoint of a veterinary inspector who stands at that side of the poultry conveyed by the suspension conveyor where the conveyor is positioned the entrails are at the frontal side of the conveyor. So, these entrails are optimally visible thus simplifying the inspection thereof.

Finally an embodiment is mentioned in which the transportation means comprise gripping means movable between an opened and a closed position. In the opened position the gripping means can take over the entrails from the means which have removed the entrails from the abdominal cavity of the bird. Next, in the closed position the entrails are moved synchronously with the poultry.

Hereinafter the invention will be elucidated further referring to the one and only figure, in which extremely schematically a top plan view of an embodiment of the apparatus according to the invention is represented.

In the figure a striped and dotted line 1 represents a suspension conveyor progressing in the direction of arrow 2. Birds 3 to be processed (schematically dotted) are, in a way known per se with their legs 4 suspended from the suspension conveyor 1. The suspension conveyor 1 passes a rotating processing apparatus 5 which carries regularly spaced about its circumference means 6 known per se too for removing the entrails from the abdominal cavity of the bird. The operation of such a processing apparatus 5 comprising means 6 is known per se and does not need any further elucidation within the scope of the present invention. It is noted only that in the present embodiment the birds 3 are subjected to the required processing while passing the processing apparatus 5, wherein the entrails 7 are removed from the abdominal cavity and are entirely loosened from the birds.

As seen in the conveying direction of the suspension conveyor 1 behind the processing apparatus 5 and aside the suspension conveyor 1 still a further conveyor is positioned for the entrails 7 removed from the birds 3. In the illustrated embodiment this conveyor comprises an endless chain 8 running around two reversal wheels 9. Of course other conveyors are conceivable too, such as belt conveyor or alike. The chain 8 comprises a number of transportation means for receiving the respective entrails packages 7, in the illustrated embodiment shaped as gripping means 10.

The direction of progression of the chain conveyor 8 is indicated by arrow 11.

The entrails 7 removed from the birds 3 using the means 6 of the processing apparatus 5 are conveyed along by these means 6 until the gripping means 10 of the chain conveyor 8 take over the entrails 7 from the means 6. Next the entrails 7 are taken along by the chain conveyor 8. The transportation velocity of the chain conveyor 8 equals the transportation velocity of the suspension conveyor 1, such that the entrails 7 move along synchronously with the respective birds 3 at the part of the chain conveyor 8 distanced most from the birds 3. To take care that the entrails 7 are precisely synchronised with the respective bird 3 (such as entrails 7' and bird 3' or entrails 7'' and bird 3'') the suspension conveyor 1 runs through some curves 12 or alike.

The gripping means 10 are movable between an opened and a closed position. The motion from the opened towards the closed position occurs at the moment where the gripping means 10 and a processing means 6 of the processing apparatus 5 carrying an entrails package 7 are in proximity and the respective entrails package 7 has to be gripped by the gripping means 10. After the gripping means 10 and entrails package 7 have passed the adjacent straight section of the chain conveyor 8 the gripping means 10 may be opened and the entrails 7 may be supplied to a discharge chute 13 or alike. In the opened position the gripping means 10 next are returned to the processing apparatus 5.

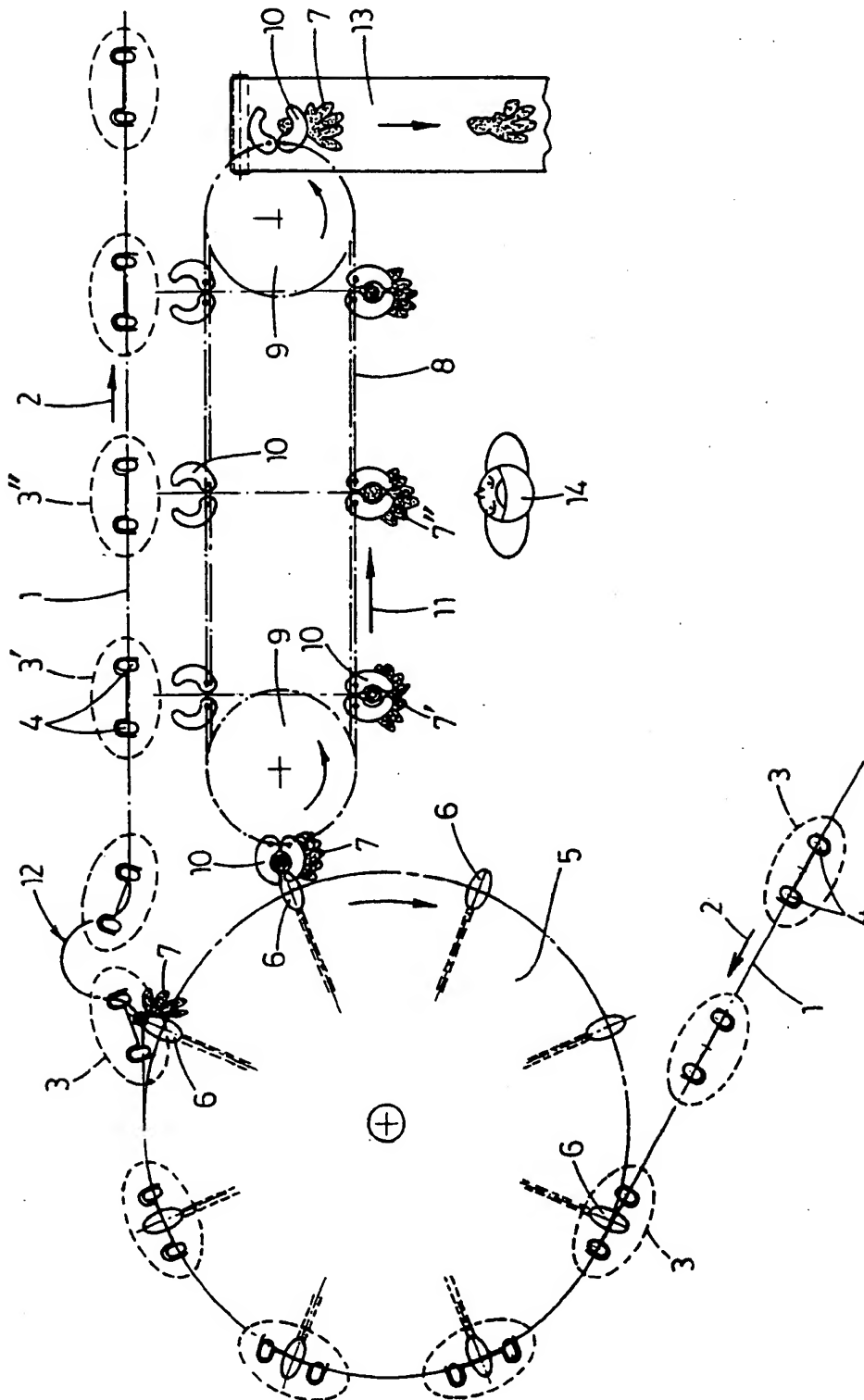
Aside of the chain conveyor 8 a veterinary inspector 14 stands who checks whether the passing entrails 7 do not contain irregularities. Because the entrails, as seen from the position of the inspector 14, are at the frontal side of the chain conveyor 8 these are optimally visible. Further no discussion is possible about the question to which birds 3 the respective entrails packages 7 belong, for these entrails 7 and birds 3 are moved synchronously.

The invention is not restricted to the embodiment described before, which, within the scope of the invention, may be varied widely. So the conveyor 8 may be fit too for conveying entrails which

are still connected with the birds through a layer of fat, but which do not further contact the birds.

Claims

1. Method for processing poultry which with its legs is suspended from a suspension conveyor, wherein the entrails are removed from the abdominal cavity of the poultry, **characterized** in that the entrails in a from the poultry separated manner are moved synchronously therewith over some distance.
2. Method according to claim 1, **characterized** in that the entrails are entirely loosened from the poultry.
3. Apparatus for carrying out the method according to claim 1 or 2, comprising means for removing the entrails from the abdominal cavity of the poultry, **characterized** by a conveyor for conveying the entrails synchronously with the poultry along part of its track.
4. Apparatus according to claim 3, **characterized** in that the said part of the conveyor for the entrails follows a track positioned aside the poultry.
5. Apparatus according to claim 4, **characterized** in that the conveyor comprises an endless conveyor, such as a chain conveyor, following an elongated substantially horizontal track, said conveyor carrying a number of transportation means for receiving the respective entrails packages.
6. Apparatus according to claim 5, **characterized** in that the direction of progression of the conveyor is such that the transportation means move synchronously with the poultry at the conveyor part distanced most from the poultry.
7. Apparatus according to claim 5 or 6, **characterized** in that the transportation means comprise gripping means movable between an opened and a closed position.





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EUROPEAN SEARCH REPORT

Application Number

EP 92 20 2285

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-4 467 498 (GRAHAM) * the whole document *	1-4	A22C21/06
A	----	5,7	
X	BE-A-813 138 (VAN BIERVLIET) * page 3, line 20 - page 4, paragraph 7 *	1-4	
A	US-A-4 616 381 (HARRIS) * column 3, line 36 - column 4, line 21; figure 1 *	1,3,4,5	
A	US-A-3 474 492 (VISCOLOSI) * column 3, line 52 - column 5, line 9 *	1-5	
A	US-A-3 663 991 (HARBEN)		
A	GB-A-1 378 411 (COPE WHELON AND COMPANY)		
A	US-A-5 026 317 (KENNEDY)		
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			A22C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 27 OCTOBER 1992	Examiner DE LAMEILLIEURE D.
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